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AUTHOR Gordon, Steven B.; Wiltz, Nick
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ABSTRACT

The authors describe the background for and explore the use of a unique apartment-like setting, complete with observational facilities, in which the parents of a hyperactive, aggressive boy were trained in the application of behavioral principles. Procedures consisted of having the entire family live in this setting for 5 consecutive days where they received training via instructional materials, modeling and feedback. The family then returned home, maintaining contact with the trainer/consultant only by telephone. The data presented show significant reductions in the rates of non-compliances and destructive acts toward people and property. In addition, programs devised independently by the mother and procedures used for a school program are presented. Results are discussed with reference to the use of a residence unit as a device in the initial phases of parent training in behavior modification and data collection and as an aid in maximizing professional efficiency. (Author/TL)

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THE USE OF A RESIDENCE UNIT AS AN AID TO TRAINING PARENTS IN BEHAVIOR MODIFICATION: TURNING PSYCHOLOGY OVER TO THE UNWASHED[1,2]

Steven B. Gordon and Nick Wiltz

Clinical Training Unit

Child Development and Mental Retardation Center

University of Washington

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I would like to begin by describing a model of intervention with deviant children that we have been using at the Child Development and Mental Retardation Center. This is a triadic model consisting of a consultant, mediator and target and is described by Tharp & Wetzel in their book, Behavior Modification in the Natural Environment (1969).

Insert Figure 1 about here

The target is the identified patient or, in this case, the deviant child. The mediator, typically a parent or schoolteacher, is the person who possesses the reinforcers and is able to dispense them contingently. The consultant, typically a psychologist, is the one who possesses the appropriate knowledge. The role of the consultant, however, can be extended to nonpsychologists, via training, and even further increase the efficiency. The triadic model is more complex than what has so far been presented and I refer more interested persons to read Tharp & Wetzel's book; however, for present purposes we may stop here.

Initially, behavior modification research bypassed the mediator and the focus of interaction was between the consultant and the target. This was necessary because learning principles developed with lower animals needed empirical validation with a human population and the psychologist naturally assumed the role of mediator as well. With the validation of these behavioral principles, efforts were turned toward maximizing their effectiveness. It then became

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apparent that the focus of interaction should not be between the consultant and the target, but that a person in the child's natural environment (a mediator) had to enter the picture in order to best answer the questions of maintenance and generalization. The next step in the research was to focus on the interaction of the mediator and target in order to determine whether people without extensive training in psychotherapy and behavior modification could bring about changes in children's behavior. This question now seems to be firmly resolved.

This paper will address itself to what I consider to be the next phase in the development of behavior modification; that is, the interaction between the consultant and the mediator using the behavior of the target as the dependent variable. More specifically, it is time that research direct its attention to the ways in which we, as professionals, can best impart information and train the mediators of the child's natural environment. The success or failure of behavior modification rests as much on the consultant's ability to train non-professionals and needs further investigation.

Hospital attendants, undergraduate college students, teachers, and parents have all played the mediator role. An extensive review of this subject is beyond the scope of this paper (see Ullman & Krasner, 1965; Tharp & Wetzel, 1969). However, we are in the business of training parents so I will spend a little time in this area. Wolf, Risley, & Mees (1964) set out to train the parents of an autistic child. The parents began by working with their child under the supervision of an attendant for a short period of time. Gradually, the child was allowed to spend more and more time at home. This was, perhaps, the start of the triadic model. Another technique of training was described by Wahler, Winkel, Peterson, & Morrison (1965) whereby instructions were given to the mother to respond to a light which served as a cue for her to alter the interaction pattern between herself and her child. In addition, parents have received training via video tape feedback (Bernal, Duryee, Pruett, & Burns, 1968), a radio transmitter

to monitor mother's consequation (Wahler, 1967), and by reading instructional materials. An ideal training situation might be a combination of instructional materials, modeling, active participation and feedback with training being carried out in the target's natural environment. However, when training is carried out in the home it is unlikely that a therapist will be able to spend more than several hours a week at this function. This not only prevents the consultant from gaining accurate first-hand knowledge of the family interaction pattern but also limits the amount of training accomplished.

At the University of Washington's Child Development and Mental Retardation Center (CDMRC) we have begun to investigate the use of having a family live in a residence unit for an extended period of time for the purposes of observation, data collection, and more important, training. The residence unit is a three bedroom apartment complete with two one-way mirrors and strategically placed microphones allowing for observation of the living room, kitchen, dining area, and a room for time-out. This unit was completed in December of 1968 with two purposes in mind. The first was to provide a place where families could live while they were going through the assessment procedure of the clinic and the second was for training purposes. The use of the apartment to house families was not met because cheaper and better located facilities were available elsewhere. The second function has not been explored very extensively and our efforts mark the first attempt to do so at CDMRC. Let me begin by describing in detail one of the cases and the procedures that were used at the residence unit and the direction intervention has taken.

The S was a nine year old boy with a Wechsler Intelligence Scale for Children Full Scale I.Q. of 117. Due to his inability to adequately function in school, he was placed in a special education class for mentally retarded children. The S consistently refused to go to school and had only attended five days over a four and one-half month period. He had also spent some time in a juvenile

detention facility and at the time of referral the parents were seriously considering having him returned due to their inability to cope with his deviant behavior. In describing the S's behavior at home his mother reported that he would urinate on the toilet facilities and wall, take money from her purse, throw eggs across the street, light matches, lock himself in the bathroom, empty pills from the bottles and put damp ones back in their containers, throw fruit against the walls and furniture, put ice cubes in bed and pour pitchers of juice over the floor. It should be evident that he was not all good. The S had been on a variety of medication with no beneficial effect and at the time of referral was not on any medication. The S lived with his mother, father, and seven year old brother, who was not considered a "problem child." The father, 43 years old and a retired serviceman, attended school to continue his education. The mother, 51 and a housewife, was recovering from major surgery and was menopausal. She described her marriage as an unsatisfactory relationship.

The parents recorded data prior to, during, and after training in the following target areas: mands, noncompliance, destructive acts toward people, and destructive acts toward property. Two telephone calls were made to the parents to instruct them in data collection prior to their visit to the residence unit.

The entire family moved into the residence unit for a period of five days, entering on a Sunday evening and leaving on a Friday afternoon. A formal arrangement was made for observation, using a formalized coding system for recording family interaction, from 10 a.m. to 7 p.m. for mother and children with father present for the last three hours of this time due to his school commitment. The first day was devoted primarily to medical, psychological, social work and psychiatric evaluations, independent of our data collection and training.

Tuesday night after eight hours of observation had been accomplished, the

parents were requested to read the book, Living With Children (Patterson & Gullion, 1968), and make notes and questions based on their reading to be answered the following morning. At noon the next day the questions were answered and time-out procedures were outlined. At this time a reinforcement menu was developed for the S, including his most desired object--a real gun. Since allowing the S the opportunity to earn a real gun made us slightly uncomfortable, a compromise was negotiated whereby a pop gun was established as a substitute. The S earned points in two ways simultaneously--one point for each mand complied with and one point for appropriate behavior on a variable interval schedule of three minutes which was gradually increased to four minutes within one and one-half hours. The points were registered on a work box device, described by Patterson, Ray, & Shaw (1968), which was operated from the observation room. In addition, each mand was to involve mother's increased voice volume as an S^D for compliance. Each noncompliance resulted in time-out for five minutes. Major deviant acts such as running away from the apartment were consequated by one-half hour of time-out. All the procedures, both negative and positive, were not only modeled by the investigator but the mother rehearsed the reinforcement and punishment procedures step by step with the S. The younger brother also had the opportunity to earn points by ignoring the subject's noncompliance. The investigator then left the room and observed the family interaction with the recommended intervention procedures in effect.

After approximately one and one-half hours the investigator returned, answered questions, and made minor changes in the program including the revision that the younger brother could earn one point for each of the S's compliances. The mother was asked to assume the function of the work box by giving points for compliance and for every five minutes of appropriate behavior, so that she was then dispensing the reinforcer and collecting data. Upon the father's

arrival in the late afternoon, the investigator explained the program and had him take over for one-half hour so that the mother might have some rest. The family was then on their own to run the program until the next morning.

The last two days were largely devoted to observation and making less frequent, minor changes in the treatment procedures. On Friday evening just prior to the family's departure an exit interview was held where an evaluation of the program to date was discussed and questions were answered by the therapist. The parents were encouraged to continue the program under the supervision of one of the investigators whereby the telephone would be used as the principal communication aid to further change in the environment of the child. The parents were asked to keep all data in a specific notebook and report it to the therapist who would call to clarify any problems and to make appropriate changes with the goal that eventually verbal and social reinforcers would replace the mechanical procedures instituted during the residential unit intervention. Gradually, greater responsibility for developing new programs was turned over to the mother so that she could learn to function independently of the therapist. One of the programs developed by her was a bedtime program whereby she defined the target behavior, collected baseline data, and then began intervention. The results of this mother-initiated program are presented in figure 2 (the "teardrop" represents the median time).

Insert Figure 2 about here

In addition, points were gradually faded so that at the present time the subject is earning points only for compliance and bedtime which can be exchanged for something desirable on the weekend. Throughout there has also been an emphasis on positive reinforcement contingent on normative behavior (reading a book,

watching TV, etc.).

In addition to the home program, an attempt was made to facilitate the S's re-entry into the world of school. Prior to this time, the mother was instructed to decrease her attention towards the S during school hours. Specifically, she was not to play any board games with him and to keep her discussion with him at a minimum. This was an attempt to teach the subject that the home was not a fun place to be. During this time the two investigators made a trip to the S's school in an attempt to establish a program similar to the one at home. It was decided that the S could earn points for both academic work and appropriate behavior demonstrated during the school day. These points would be exchanged for free time at school. In addition, inappropriate behavior was to be punished by five minutes of time-out. After the school program was put into order the next step was for the S's mother to explain to him that all little boys are in school unless they are sick and from this moment on if he chose to stay home he would be treated as if he were sick which meant in bed, in pajamas, no television, and rest--essentially getting a big dose of castor oil. The first day he tested his mother but when he saw that she meant what she said, he went to school for the first time in months. Unfortunately, several times when the S behaved inappropriately, rather than being placed in time-out, the teacher proceeded to snap him on the back of the neck with a rubber band. One can only estimate the reduction of the positive reinforcement this teacher could now have on this S. After several telephone calls to the teacher, it was decided that she could no longer be used to consequate the child's behavior on contingency. A reparative measure was then undertaken whereby the S's behavior at school would be consequated at home. This was accomplished by the use of a note program whereby academic work would be marked at the end of each period and a note would be sent home with the child with a very terse sentence stating either that the subject did or did not

do his work satisfactorily. Each positive sentence could be exchanged for one-half hour of television. After several more incidences of rubber band snapping on the S's neck, he was transferred to another teacher in the same room (two classes occupied the same room) who was felt to have more control both over himself and the S. Figure 3 presents the data for the note program administered by both teachers (the "teardrop" represents the median number of periods).

Insert Figure 3 about here

The major part of the data has been collected by the mother. The data for mands and noncompliances, destructive acts toward people, and destructive acts toward property for the major phases of intervention are presented in figures 4, 5, and 6, respectively. Phases #1 through #7 represent the following: before entering the residence unit, training in the residence unit, return home, reduction of mother attention during school hours, return to school with consequation at school, note program with teacher #1, and note program with teacher #2.

Insert Figures 4, 5, & 6 about here

Another issue recent investigators have been concerned with is efficiency in terms of professional time spent on cases. Table 1 presents the number of hours spent for different functions on this case.

Insert Table 1 about here

A comparison of the time spent on this case to date with the time spent on similar cases cannot be made because this data is not typically collected or reported.

This interesting bit of data, which may be a function of the consultant's verbosity, the mediator's diffuseness, and/or the target's deviancy is certainly one measure of efficiency. It may be a dependent variable which should be included in all reports on attempts to change children's behavior.

Presently, we are struggling along with a teacher who believes in inconsistency, a father who is overly harsh in applying time-out, and a mother who is not as consistent as she was initially. These problems are currently being dealt with over the telephone and if this fails, then perhaps periodic booster sessions in the residence unit may be used to reshape the skills of the parents. Regardless of the difficulties encountered from here on out, this study supports the view that parents given a massive dose of training in a short period of time while living in an apartment-like residence can become effective agents for the change of their children's deviant behavior. Although the concepts of training nonprofessional change agents in behavior modification and the use of the telephone as an adjunct or replacement of face-to-face contact have been employed previously (Tharp & Wetzel, 1969), the use of residence units for purposes of training appears unique and is in need of further exploration. Obviously, there is a need to show long-term effects with any technique. It is, however, true that certain phases of treatment are important in their own right and this study is the evaluation of one part of the treatment with this family. In summary, the residence unit was found to be an extremely helpful partner in the process of the training program for these parents by providing intense initial contact. The ability to observe behavior, collect data, intervene for purposes of instructions, model more desired forms of interaction, and give feedback in a home-like setting cannot be overemphasized. Its value is even multiplied when one considers its use with families living at far distances geographically.

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Footnotes

1. This study was supported by funding from Child Bureau, MR Training, Health Services and Mental Health (Project Number 913).

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2. This presentation was made at the Western Psychological Association Meeting, San Francisco, California, April 1971.

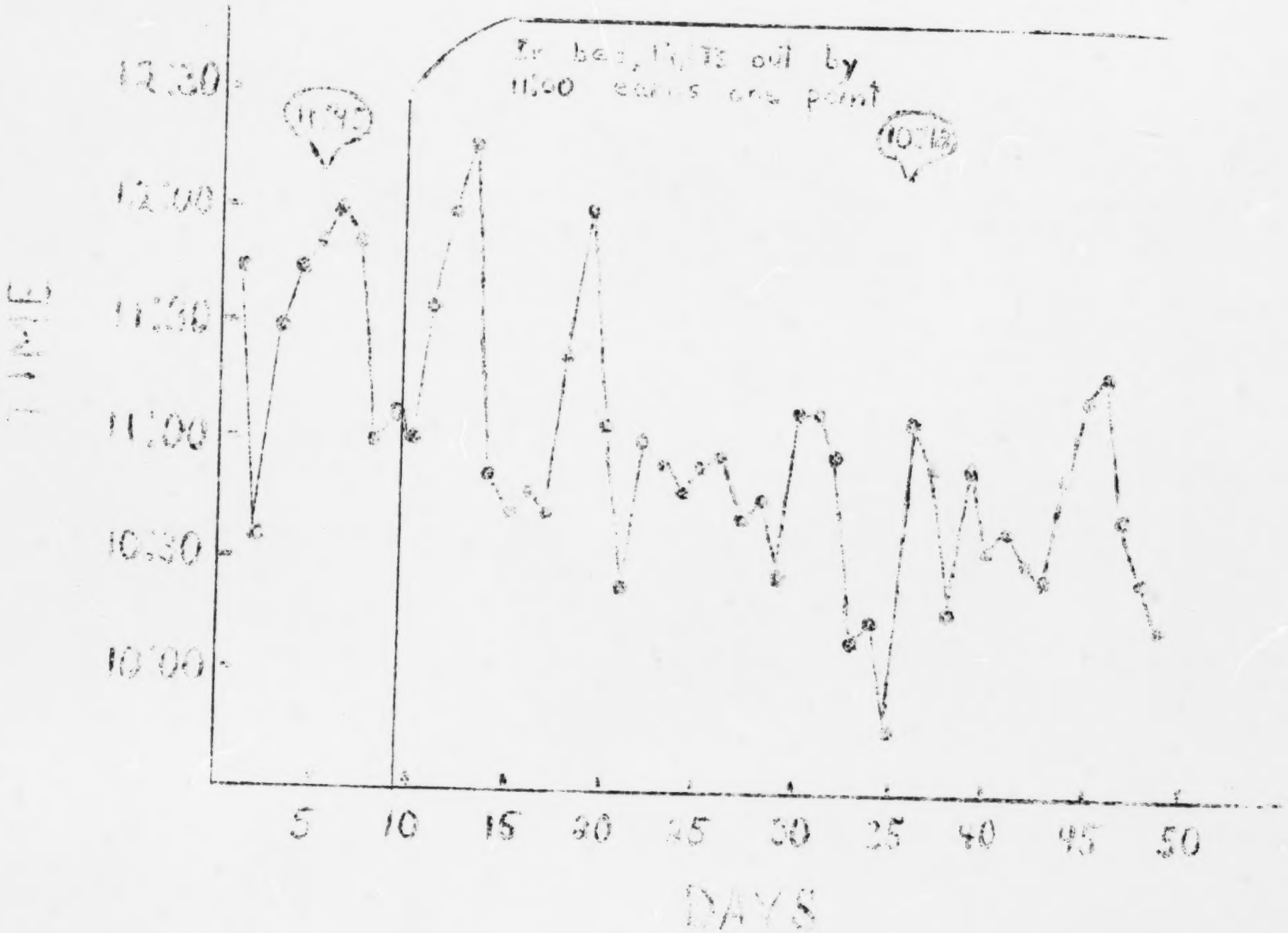

Fig. 4. Mother initiated bed time program

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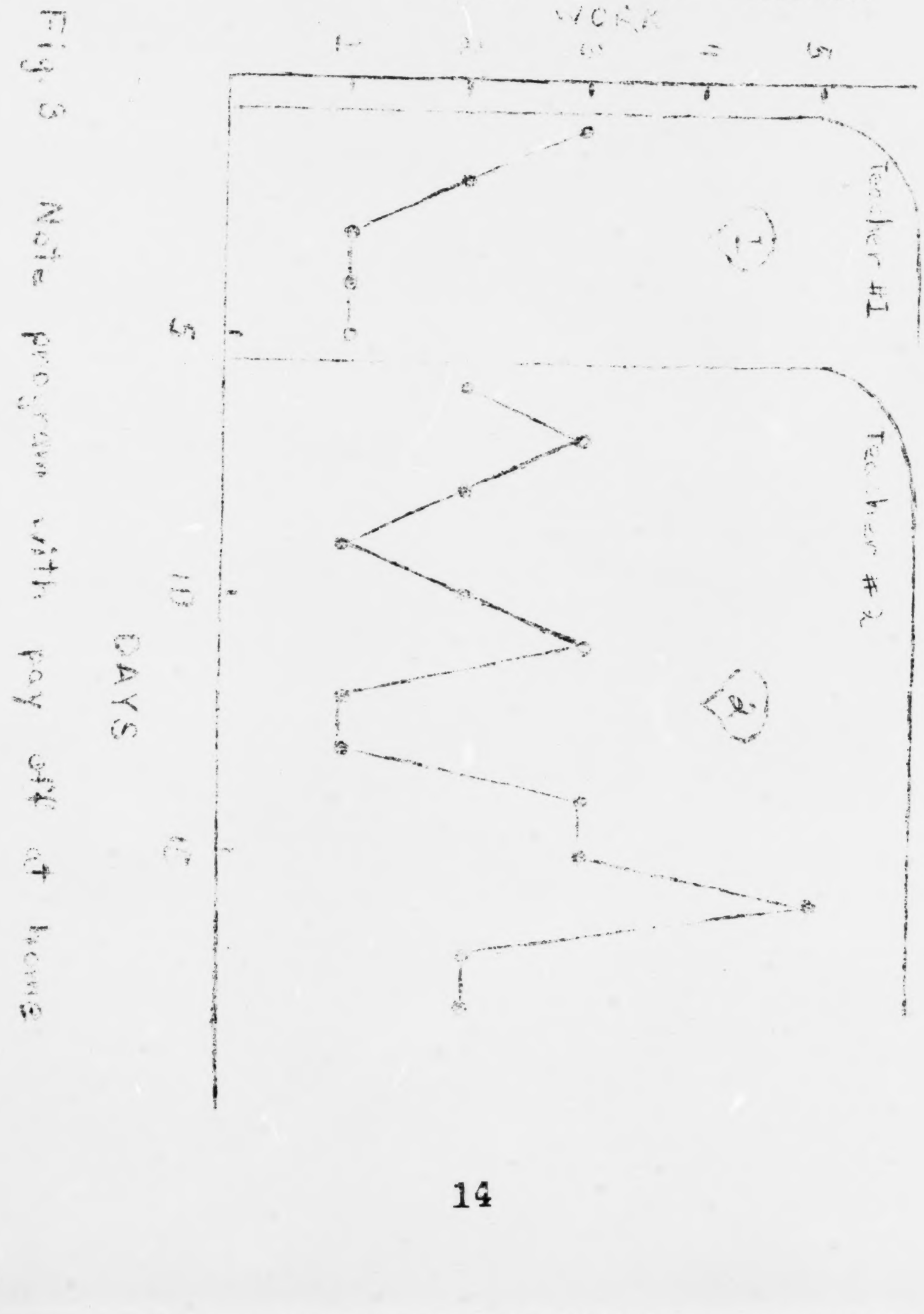
PERIODS OF SATISFACTORY WORK
1
2
3
4
5
Employee #1
Employee #2
Average Production
Earnings
PAY PERIODS
1 MONTH
2
3
4
5
6

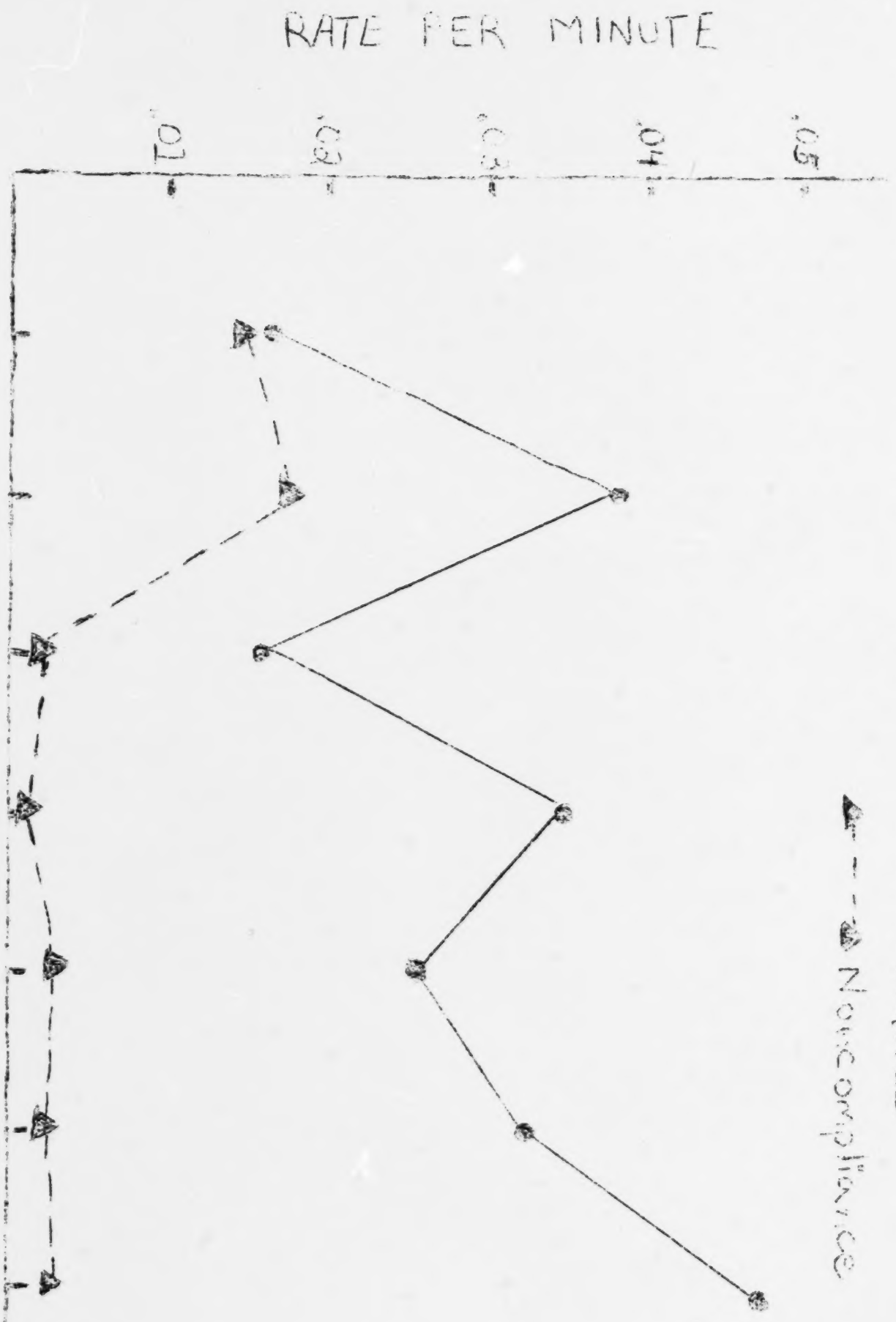

Fig. 4 Rate of means 2nd noncompliances For all phases

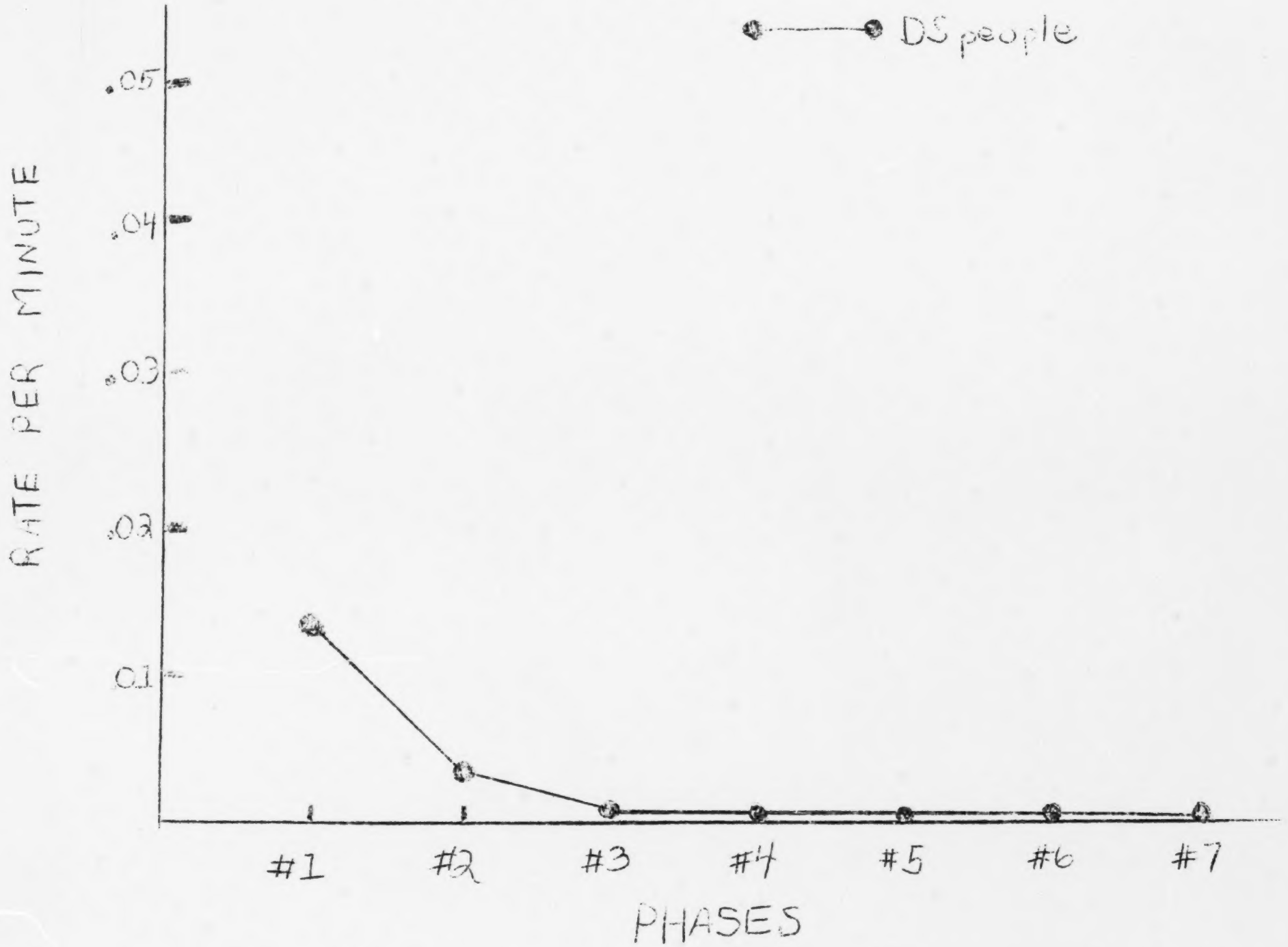

Fig. 5 Rate of destructive acts toward people for all phases

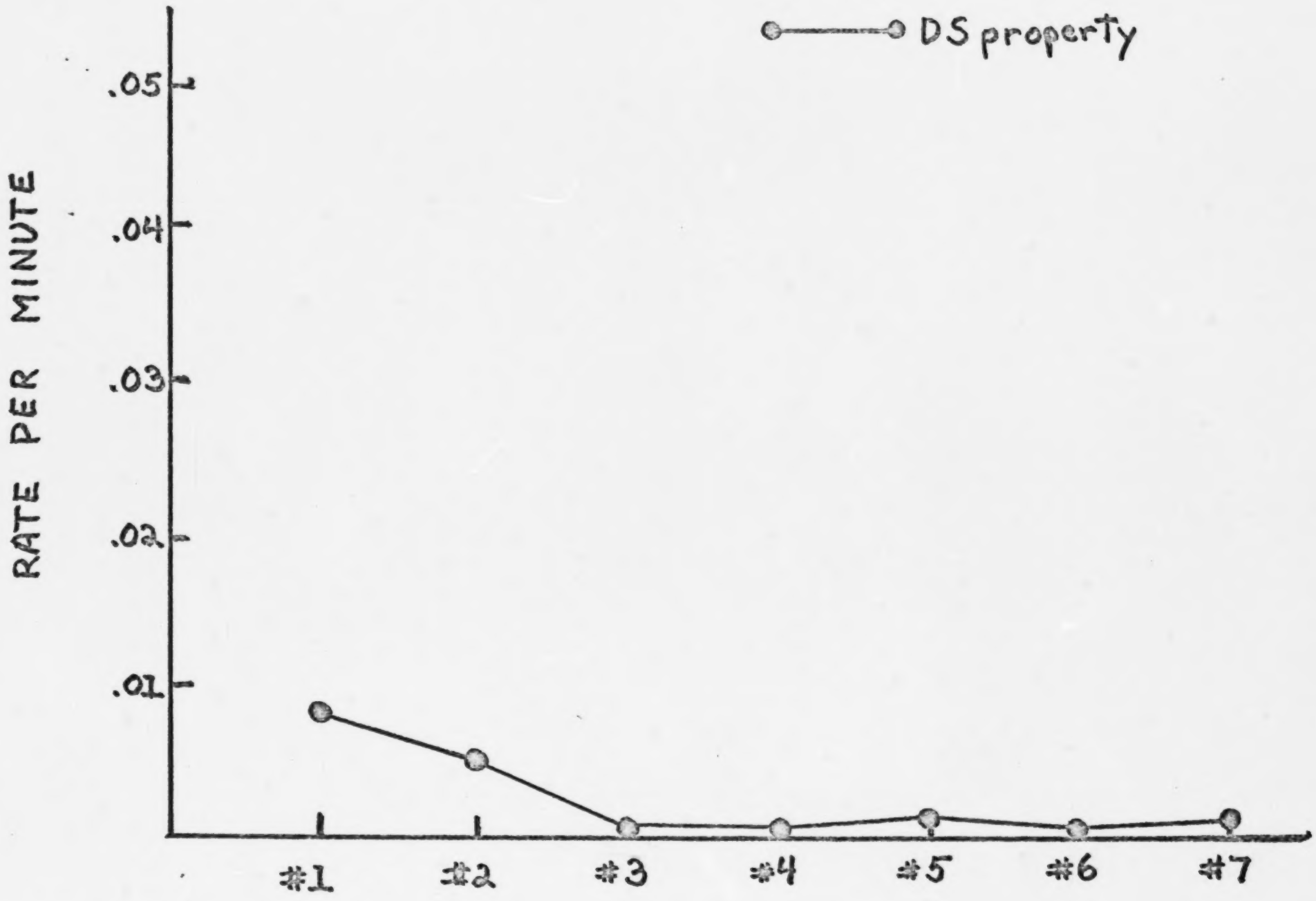

Fig 6. Rate of destructive acts toward property for all phases

Table 1

Analysis of the Investigators' Time According to Function

Function	Number of Hours
Consultation[a]	9
Telephone contact	
pretraining	1/2
with mother after the residence unit	11
with school after the residence unit	3 3/4
Observation in residence unit[a]	15
Training in residence unit	5 3/4
Home visit[a]	2
School visit[a]	4
Transportation[a]	12
Total	63

[a]Time is presented for 2 investigators